

# **Vehicle Standard (Australian Design Rule 99/01 – Lane Departure Warning Systems) 2024**

Made under section 12 of the *Road Vehicle Standards Act 2018*

## **Explanatory Statement**

Approved by Senator the Hon Carol Brown,  
Assistant Minister for Infrastructure and Transport

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## 1. LEGISLATIVE AUTHORITY

### 1.1. National Road Vehicle Standards

The Vehicle Standard (Australian Design Rule 99/01 – Lane Departure Warning Systems) 2023, which may also be cited as the Australian Design Rule 99/01 – Lane Departure Warning Systems or ADR 99/01, is made under the *Road Vehicle Standards Act 2018* (RVSA).

The RVSA enables the Australian Government to establish nationally uniform standards that apply to road vehicles and road vehicle components when they are provided to the market in Australia for the first time. The RVSA applies to vehicles or components whether they are manufactured in Australia or imported.

The making of the national road vehicle standards, necessary for the RVSA’s effective operation, is provided for in section 12, which empowers the Minister to “determine standards for road vehicles or road vehicle components”. These standards are also referred to as the Australian Design Rules (ADRs).

### 1.2. Exemption from Sunsetting

ADR 99/01 is exempt from the sunsetting provisions of the *Legislation Act 2003*.

#### *Source of the Exemption*

A standard made under section 12 of the RVSA is not subject to the sunsetting provisions of section 50 of the *Legislation Act 2003* through section 12 of the Legislation (Exemptions and Other Matters) Regulation 2015 (table item 56C). A similar exemption was previously granted in respect of national road vehicle standards made under section 7 of the *Motor Vehicle Standards Act 1989* (MVSA) (item 40, section 12 of the Legislation (Exemptions and Other Matters) Regulation 2015). This exemption is important to ensure that ADRs, including ADR 99/01, continue to remain in force and available to regulators, industry and the public.

#### *Intergovernmental dependencies*

The exemption concerns ADRs that facilitate the establishment and operation of the intergovernmental vehicle standard regime that Commonwealth, state and territory governments rely on to regulate the safety of vehicles on public roads.

The Commonwealth uses the ADRs as the basis on which approvals to supply types of road vehicles to the market are granted under the Road Vehicle Standards Rules 2019. States and territories and the National Heavy Vehicle Regulator use the ADRs as the primary criteria on which vehicles are assessed for road worthiness. This ‘in-service’ aspect is dependent on the date of manufacture, which determines the applicable version of the ADRs against which the vehicle can be assessed. The ability to rely on national standards is particularly relevant given the long service life of vehicles – the average age of vehicles in Australia is over 10 years.

While the ADRs are updated regularly to reflect changes in technology, it is not possible to apply these new standards retrospectively to vehicles that are already in use. With prior versions of ADRs kept on the Federal Register of Legislation, state and territory governments can use them to ensure vehicles continue to comply with the ADRs that were in force when they were first supplied to the market.

In the event that the Commonwealth could not justify the maintenance of the ADRs, state and territory governments would be compelled to create their own vehicle standards. Whilst this could mean adopting the substance of the lapsed ADRs as an interim measure, the differing needs and agendas of each state and territory government may result in variations to in-service regulations. Having different vehicle standards across the states and territories would make the scheme operate contrary to the underlying policy intent of the RVSA, which is to set nationally consistent performance-based standards.

#### *Commercial dependencies*

The effect on vehicle manufacturers to redesign existing models to comply with new ADRs would present a burden and be a costly and onerous exercise. Manufacturers should not be expected to continually go back to redesign existing vehicles. Furthermore, ongoing product recalls to comply with new ADRs would undermine consumer confidence with significant financial impact to manufacturers. This exemption allows vehicle manufacturers to focus their efforts to ensure new models supplied to the market continue to comply.

#### *Reviews of Australian Design Rules*

ADRs are subject to regular reviews, as resources permit, and when developments in vehicle technology necessitates updates to requirements. Reviews of the ADRs ensure the ongoing effectiveness of a nationally consistent system of technical regulations for vehicle design, which are closely aligned wherever appropriate with leading international standards such as United Nations (UN) regulations. This method facilitates the rapid introduction of the latest safety devices and technological advances into the Australian market, while also contributing to the industry's cost competitiveness in the domestic market. Where a review results in a new or amended ADR, these changes are subject to full parliamentary scrutiny.

### 1.3. International Harmonisation

A majority of Australian road vehicle standards, including ADR 99/01, are closely harmonised with internationally based UN regulations, which are developed by the UN World Forum for Harmonization of Vehicle Regulations. Harmonisation ensures that vehicles built to the most recent safety, environmental and anti-theft standards are supplied to the Australian market at the least cost and that Australia has access to the latest vehicle technologies. In contrast, more Australian specific standards would require vehicles to be designed, developed and produced specifically for the relatively small Australian market. Unless needed to achieve legitimate policy objectives, a market specific standard would generally result in a significantly lower net benefit and benefit-cost ratio, than if costs were amortised over a number of markets, such as occurs with UN regulations.

## **2. PURPOSE AND OPERATION**

### **2.1. Overview of the Regulatory Framework**

The RVSA establishes a framework to regulate the importation and first provision of road vehicles to the market in Australia. The core principle of this framework is that vehicles that comply with appropriate standards are suitable for provision to the market in Australia. The ADRs have set out those standards since the early 1970s. At that time, they were applied cooperatively by the Australian Motor Vehicle Certification Board representing the Commonwealth and state and territory governments. In 1989, this arrangement was replaced by the MVSA and the Australian Design Rules were determined as national standards. The RVSA commenced in full and replaced the MVSA on 1 July 2021. A two-year transition period was provided between 1 July 2021 and 30 June 2023.

Under the RVSA, the ADRs are national road vehicle standards intended to make vehicles safe to use, control the emission of gas, particles or noise, secure vehicles against theft, provide for the security marking of vehicles and promote the saving of energy. The ADRs are applied to vehicles as criteria for approval under various regulatory pathways set out in the Road Vehicle Standards legislation. Vehicles approved under these regulatory pathways can be provided to the market in Australia for use in transport.

### **2.2. Overview of the ADR**

The purpose of ADR 99/01 is to specify requirements for Lane Departure Warning Systems (LDWS) fitted to medium and heavy goods vehicles to warn a distracted or drowsy driver if the vehicle is unintentionally drifting out of its travel lane.

LDWS typically use a forward-facing camera to constantly monitor lane markings on the road ahead to detect any unintentional drift of the vehicle out of its lane. When an LDWS detects an unintentional lane departure, it will warn the driver using an escalating combination of visual, audible, and/or haptic (e.g. steering wheel vibration) alerts. LDWS will not provide a warning and will automatically deactivate when the direction indicator is used. LDWS will usually also automatically deactivate when the vehicle is travelling along a road where it cannot detect lane markings.

Clause 3.1 requires omnibuses and medium and heavy goods vehicles of vehicle categories MD, ME, NB and NC to comply with ADR 99/01 from 1 September 2026 for all new model vehicles and from 1 September 2028 for all new vehicles.

Clause 3.2 exempts omnibuses specially designed with spaces for standing passengers, articulated omnibuses, vehicles with four or more axles and vehicles designed for off-road use (as defined in Appendix B) from having to comply with ADR 99/01. These exemptions are based on the rationale in the introduction of the relevant international standard, the UN Regulation No. 130 (R130), as well as similar exemptions applied in the European Union and other markets. LDWS are principally designed to warn a distracted or drowsy driver if the vehicle is unintentionally drifting out of its travel lane, particularly under monotonous highway driving conditions (e.g. linehaul freight operations), and would therefore be likely to have much less benefit for the exempt vehicles. Further these exempt vehicles can also have technical features that make LDWS installation more difficult and are generally produced in lower volume, which means any extra development and testing costs would have to be amortised over much fewer vehicle sales.

Clause 5.1 requires all vehicles to be fitted with an LDWS and meet the requirements set out in Appendix A of this standard, as varied by clause 6 (Exemptions and Alternative Procedures).

Clause 6.1 provides exemptions from the requirements of Appendix A which relate to gaining a UN R130 Approval. This is because it is not a requirement to gain a UN Approval for vehicle supply to market in Australia, where the Commonwealth administers approvals through the RVSA and the ADRs.

Clause 6.4.1 allows for the required physical tests of the performance of the LDWS to be conducted using the lane markings of a Contracting Party as identified in Annex 3 to Appendix A, or one of the Australian lane markings as identified in Appendix C. This clause defines the lane markings from which manufacturers and testing facilities may choose for the minimum required physical tests of the performance of the LDWS.

Clause 6.4.2 specifies that vehicles must comply with paragraph 5.2.1 (performance requirements) for all the Australian lane markings identified in Appendix C of ADR 99/01, and that compliance with this requirement shall be demonstrated via a physical test or another documented means which is sufficiently valid and accurate to ensure the vehicle would comply if subjected to such physical testing.

Clause 7.1 has been reserved to allow for the inclusion of Australian lane markings in Annex 3 of the United Nations Regulation No. 130 – UNIFORM PROVISIONS CONCERNING THE APPROVAL OF MOTOR VEHICLES WITH REGARD TO THE LANE DEPARTURE WARNING SYSTEM (LDWS) incorporating the proposed 01 series of amendments, when it is adopted by the World Forum for the Harmonization of Vehicle Regulations.

To meet UN R130 as incorporated in Appendix A, a LDWS must be active at vehicle speeds above 60 km/h (unless manually deactivated). If a means (e.g. switch) is provided to manually deactivate the LDWS, the LDWS function must be automatically re-instated at the start of each new ignition on (run) cycle, and a constant optical warning must be provided to inform the driver when the LDWS is deactivated. The LDWS is required (when active) to warn the driver if the vehicle crosses over a visible lane marking, when there has been no purposeful demand to do so (including for both straight sections, and curved sections having an inner lane marking with a radius  $\geq 250$  m). The performance of the LDWS is assessed in a series of four tests conducted at a speed of  $65 \pm 3$  km/h. Two of these tests are performed by gently drifting the vehicle to the left, so that the vehicle crosses the lane markings at two different rates of departure within the range 0.1 to 0.8 m/s. The other two tests are performed by gently drifting the vehicle to the right, so that the vehicle crosses the lane markings at two different rates of departure within the range 0.1 to 0.8 m/s. In all tests, the required lane departure warnings must be provided before the outside of the tyre on the front wheel closest to the lane markings passes more than 0.3 m beyond the outside edge of the lane markings. There are also failure warning signal and deactivation warning signal tests for the LDWS.

### **3. MATTERS INCORPORATED BY REFERENCE**

#### **3.1. Legislative Instruments**

Clause 4.1.1 includes a reference to the Vehicle Standard (Australian Design Rule Definitions and Vehicle Categories) 2005, which may also be cited as the Australian Design Rule – Definitions and Vehicle Categories. This sets out common definitions for many terms used in the ADRs, including the vehicle categories used in ADR applicability tables.

In accordance with paragraph 12(2)(b) of the RVSA, this ADR is incorporated as in force or existing from time to time.

The ADRs may be freely accessed online through the Federal Register of Legislation. The website is [www.legislation.gov.au](http://www.legislation.gov.au).

#### **3.2. Other Documents**

The introduction, and paragraphs 1 and 4.4.1 of Appendix A, include footnote references to the Consolidated Resolution on the Construction of Vehicles (R.E.3.), document ECE/TRANS/WP.29/78/Rev.6. This includes definitions for the UN vehicle category classifications used in Appendix A and the alternative standard under clause 7 of ADR 99/00.

Paragraph 5.1.2 of Appendix A includes a reference to the United Nations (UN) Regulation No. 10 (R10). This is an international standard for electromagnetic compatibility for vehicles and vehicle components.

In accordance with paragraph 14(1)(b) and subsection 14(2) of the *Legislation Act 2003*, each of these UN documents are incorporated as in force on the date this national road vehicle standard is made.

UN Regulations and Resolutions may be freely accessed online through the UN World Forum for the Harmonization of Vehicle Regulations (WP.29). The WP.29 website is [www.unece.org/trans/main/welcwp29.html](http://www.unece.org/trans/main/welcwp29.html).

### **4. CONSULTATION**

#### **4.1. General Consultation Arrangements**

It has been longstanding practice to consult widely on proposed new or amended vehicle standards. For many years, there has been active collaboration between the Commonwealth and the state and territory governments, as well as consultation with industry and consumer groups. Much of the consultation takes place within institutional arrangements established for this purpose. The analysis and documentation prepared in a particular case, and the bodies consulted, depend on the degree of impact the new or amended standard is expected to have on industry or road users.

Proposals that are regarded as significant need to be supported by an Impact Analysis (IA) meeting the requirements of the Office of Impact Analysis (OIA) as published in the *Australian Government Guide to Policy Impact Analysis* or the *Regulatory Impact Analysis Guide for Ministers' Meetings and National Standard Setting Bodies*.

## 4.2. Specific Consultation Arrangements

Public comment was sought through a consultation IA, which included a draft version of the national vehicle standard for Lane Departure Warning Systems for heavy vehicle based on UN R130. This package also included an explanatory statement and feedback form. This package was published on the department's website in April 2022 for an eight-week public comment period, which closed 4 June 2022.

The Department of Infrastructure, Transport, Regional Development, Communications and the Arts provided two ways to comment: 1) Emailing the feedback form to the Vehicle Standards Section email address; or 2) Mailing the provided feedback form to the Vehicle Standards Section postal address.

An email was also sent in April 2022 to inform senior representatives of state and territory governments, and representative bodies for heavy vehicle manufacturers, operators, and road users. In addition, a notice was published on the department's social media websites to increase public awareness and engagement.

Formal feedback was received from members of the public, state government agencies, industry, road user groups and road safety advocates. There was broad support for the implementation of a new ADR mandating LDWS for all heavy vehicles.

Following the public consultation, the feedback was used by the department in the final IA submitted to the Office of Impact Analysis to ensure regulatory decisions are made on strong evidence-based analysis.

## 5. REGULATORY IMPACT

### 5.1. Impact Analysis

An IA (refer Volume 2) was completed on options to increase the fitment of LDWS to new omnibuses and goods vehicles over 3.5 tonnes in the Australian fleet. The OIA reference number for the IA is 22-01960.

### 5.2. Benefits and Costs

There are both benefits and costs associated with mandating LDWS for omnibuses and goods vehicles over 3.5 tonnes GVM. The benefit-cost analysis for the IA estimated that a LDWS would save 62 lives and prevent 1,725 serious and 5,370 minor injuries over a 37-year period, as well as generating a likely net benefit \$4.7 million, with a likely benefit-cost ratio of 1.0.



## **6. STATEMENT OF COMPATIBILITY WITH HUMAN RIGHTS**

The following Statement is prepared in accordance with Part 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*.

### **6.1. Overview**

ADR 99/01 specifies requirements for LDWS fitted to omnibuses, medium and heavy goods vehicles, to warn a distracted or drowsy driver if the vehicle is unintentionally drifting out of its travel lane.

### **6.2. Human Rights Implications**

ADR 99/01 does not engage any of the human rights and freedoms recognised or declared in the international instruments listed in section 3 of the *Human Rights (Parliamentary Scrutiny) Act 2011*.

### **6.3. Conclusion**

ADR 99/01 is compatible with human rights, as it does not raise any human rights issues.